



Educational Topic

Aerospace Engineer

Related Job Titles:

Fluid Dynamicist, Mechanical Engineer

Job Description:

Aerospace engineers design, develop, test and oversee the building of aircraft, spacecraft, propulsion systems and space flight mission paths. When designing a new product, engineers first figure out what it needs to do. Then they design and test the parts, fit the parts together and test to see how successful it is. They also write reports on the product. Most engineers work in office buildings or laboratories. Some work outdoors at construction sites. Some must travel to different work sites.

Interests / Abilities:

- Are you good at math?
- Is your work detailed?
- Do you like to solve problems?
- Are you interested in how things work?
- Do you like working with computers?
- Do you like to take things apart and put them back together?

Suggested School Subjects / Courses:

- Mathematics (trigonometry, calculus)
- Science (physics, chemistry)
- Computer programming
- Engineering (fluid dynamics, aerodynamics, thermodynamics, propulsion dynamics, mechanical)

Education / Training Needed:

The minimum education required for this position is a bachelor's degree in aerospace engineering or a related subject from an accredited college or university. To do research, a Ph.D. is highly desired for this position.

Areas of expertise:

- *Aerodynamics*: design aerospace craft with the best air flow
- *Structures*: design and build new constructions such as a space station
- *Propulsion*: design and develop systems that drive or propel an aerospace craft
- *Astroynamics*: design spacecraft that can move and function in a space environment

Additional Resources:

- Accreditation Board for Engineering and Technology, Inc.
<http://www.abet.org>
- Astrobiology Summer Academy
<http://academy.arc.nasa.gov/>
- Careers in Aviation/Aerodynamics
<http://wings.ucdavis.edu/Careers/index.html>
- Earth to Orbit: Engineering Design Challenges
<http://eto.nasa.gov/>
- Education Pays Calculator
<http://www.educationpays.org/calc.asp>
- Graduate Student Researchers Program
<http://spacelink.nasa.gov/Instructional.Materials/NASA.Educational.Products/Graduate.Student.Researchers.Program.Brochure/index.html>
- Junior Engineering Technical Society
<http://www.asee.org/jets>
- MATHCOUNTS Competition
<http://mathcounts.org/>
- Minority University Research and Education Programs
<http://mured.nasaprs.com/>
- NASA Cooperative Education Program for college students
<http://spacelink.nasa.gov/Educational.Services/NASA.Education.Programs/Student.Support/NASA.Cooperative.Education.Program/index.html>
- NASA Jobs
<http://nasajobs.nasa.gov/>
- NASA SHARP Internship Program for high-schoolers
<http://www.mtsibase.com/sharp/>
- NASA Student Employment
http://nasajobs.nasa.gov/stud_opps/employment/index.htm
- NASA Student Involvement Program student contests
<http://www.nsip.net/index.cfm>

What can I do right now?

- Participate in Bot-Ball or FIRST Robotics competitions
(see *Robotics Education* <http://robotics.arc.nasa.gov>).
 - Take as many math and science classes as you can.
 - Participate in National Engineers Week.
 - Participate in science fair projects.
 - Call the American Association of Science and Technology Centers for information on science museums in your area that you might visit.
(202) 783-7200
 - Order activity books, poster sets and engineering kits by writing to the Society of Manufacturing Engineers, One SME Drive, P.O. Box 930, Dearborn, MI 48121-0930.
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- Order NASA career videos such as "Engineers: Turning Ideas into Reality," "Careers: Aerospace Engineer" or "Reaching for the Stars" from NASA CORE.
<http://core.nasa.gov>
 - Revolutionary Vehicle Concepts and Systems student competition
<http://avst.larc.nasa.gov/competitions.html>
 - Robotics Education
<http://robotics.arc.nasa.gov>
 - Student's Guide to Astrobiology
<http://www.astrobiology.com/student.html>
 - Take Off!
<http://www.mcet.edu/nasa/index.html>
 - Tech-Interns.com
<http://www.tech-interns.com/>

- Please take a moment to evaluate this product at:
http://ehb2.gsfc.nasa.gov/edcats/educational_topic
- Your evaluation and suggestions are vital to continually improving NASA educational materials.
- Thank you.



<http://quest.nasa.gov/people/index.html>